

KNIFE SHARPENER APPARATUS

FIELD OF THE INVENTION

The present invention relates to a knife sharpener apparatus, and more particularly to a modular knife sharpener apparatus having an adjustable guide rod assembly.

DESCRIPTION OF THE RELATED ART

Several knife sharpener systems for hand tools are currently available. Such systems are generally sold as sharpening kits and typically include a hand held sharpening hone, and/or bench hone, and a clamping device for retaining knife blade to be sharpened. The clamping device includes a graduated guide, which has several openings for receiving the hand held sharpening hone. When the knife blade is clamped within the clamping device, the hand held sharpening hone is slid across a cutting edge of the blade at a prescribed angle depending on which opening of the guide arm receives the hand held sharpening hone. The knife sharpener systems can also be employed with a bench hone by moving an extension arm of the knife sharpener across a surface such that the knife blade slides across the bench hone. It is preferable that the sharpener assemblies be compact for use during a camping trip or for storage.

Fig. 1 illustrates a conventional knife sharpener apparatus 10. The apparatus 10 includes a first clamp member 15 and a second clamp member 20. The clamp members 15 and 20 are employed to secure a knife blade therebetween during a sharpening operation. A guide plate 25 having a plurality of openings 30 is secured to the first clamp member 15 via a fastener 35. The openings 30 are positioned at discrete locations along the guide plate 25 such that a sharpening hone (not shown) can be maintained along a cutting edge of the clamped knife blade at selected angles, which correspond to the discrete locations of the openings 30. The first and second clamp members 15 and 20 are coupled together via a thumbscrew 40 and maintained in position with

1 respect to each other via another thumbscrew 45.

3 SUMMARY OF THE INVENTION

4 The following presents a simplified summary of the invention in order to
5 provide a basic understanding of some aspects of the invention. This summary
6 is not an extensive overview of the invention. It is intended to neither identify key
7 or critical elements of the invention nor delineate the scope of the invention. Its
8 sole purpose is to present some concepts of the invention in a simplified form as
9 a prelude to the more detailed description that is presented later.

10 The present invention relates to a modular knife sharpener apparatus that
11 has infinitely adjustable sharpening angles. In accordance with a first aspect of
12 the present invention, a knife sharpener apparatus is provided. The apparatus
13 includes a clamping mechanism operable to secure a knife blade; and at least
14 one infinitely adjustable guide rod coupled to the clamping mechanism to adjust a
15 sharpening angle of the knife sharpener apparatus.

16 In accordance with another aspect of the present invention, a knife
17 sharpener apparatus is provided. The apparatus includes a first clamp member
18 and a second clamp member coupled to the first clamp member. The first and
19 second clamp members are operable to secure a knife blade therebetween. The
20 apparatus further includes a first guide rod coupled to the first clamp member;
21 and a first infinitely adjustable guide loop coupled to the first guide rod to adjust a
22 sharpening angle of the knife sharpener apparatus.

23 In accordance with yet another aspect of the present invention, a knife
24 sharpener apparatus is provided. The apparatus includes a clamping
25 mechanism; and a guide plate coupled to the clamping mechanism. The guide
26 plate is vertically and/or horizontally adjustable with respect to the clamping
27 mechanism.

28 In accordance with yet another aspect of the present invention, a knife
29 sharpener apparatus is provided. The apparatus includes a clamping
30 mechanism having a first clamp member and a second clamp member. At least

1 one of the first and second clamp members includes a plurality of apertures. The
2 apparatus further includes a guide rod that can secure to any one of the plurality
3 of apertures to determine a sharpening angle of the apparatus.

4 In accordance with yet another aspect of the present invention, a knife
5 sharpener apparatus is provided. The apparatus includes adjusting means for
6 providing infinite sharpening angles for the apparatus; and means for facilitating
7 compactability of the apparatus.

8 To the accomplishment of the foregoing and related ends, the invention
9 then, comprises the features hereinafter fully described. The following
10 description and the annexed drawings set forth in detail certain illustrative
11 aspects of the invention. These aspects are indicative, however, of but a few of
12 the various ways in which the principles of the invention may be employed and
13 the present invention is intended to include all such aspects and their
14 equivalents. Other object, advantages and novel features of the invention will
15 become apparent from the following detailed description of the invention when
16 considered in conjunction with the drawings.

17 BRIEF DESCRIPTION OF THE DRAWINGS

18 Fig. 1 illustrates a prior art knife sharpener apparatus.

19 Fig. 2 illustrates a knife sharpener apparatus in accordance with an aspect
20 of the present invention.

21 Fig. 3 illustrates the knife sharpener apparatus of Fig. 2 in a folded
22 position in accordance with an aspect of the present invention.

23 Fig. 4 illustrates another knife sharpener apparatus in accordance with an
24 aspect of the present invention.

25 Fig. 5 illustrates yet another knife sharpener apparatus in accordance with
26 an aspect of the present invention.

27 Fig. 6 illustrates a guide rod for a knife sharpener apparatus in accordance
28 with an aspect of the present invention.

29 Fig. 7 illustrates a guide rod and guide loop assembly for a knife
30

1 sharpener apparatus in accordance with an aspect of the present invention.

2 Fig. 8 illustrates yet another knife sharpener apparatus in accordance with
3 an aspect of the present invention.

4 Fig. 9 illustrates another guide rod for a knife sharpener apparatus in
5 accordance with an aspect of the present invention.

6 Fig. 10 illustrates yet another knife sharpener apparatus in accordance
7 with an aspect of the present invention.

8 Fig. 11 illustrates a guide plate assembly in accordance with an aspect of
9 the present invention.

10 Fig. 12 illustrates a guide plate in accordance with an aspect of the
11 present invention.

12 Fig. 13 illustrates another guide plate assembly in accordance with an
13 aspect of the present invention.

14 Fig. 14 illustrates a knife sharpener apparatus employing the guide plate
15 assembly of Fig. 13 in a folded position in accordance with an aspect of the
16 present invention.

17 Fig. 15 illustrates yet another guide plate in accordance with an aspect of
18 the present invention.

19 Fig. 16 illustrates a methodology for adjusting a knife sharpener apparatus
20 in accordance with an aspect of the present invention.

21 22 DETAILED DESCRIPTION OF THE PREFERRED 23 EMBODIMENTS OF THE INVENTION

24 The present invention provides an easily adjustable and easily portable
25 knife sharpener apparatus. The present invention will now be described with
26 reference to the drawings, wherein like reference numerals are used to refer to
27 like elements throughout. It is to be appreciated that the various drawings are
28 not necessarily drawn to scale from one figure to another nor inside a given
29 figure, and in particular that the size of the components are arbitrarily drawn for
30 facilitating the reading of the drawings. In the following description, for purposes

1 of explanation, numerous specific details are set forth in order to provide a
2 thorough understanding of the present invention. It may be evident, however,
3 that the present invention may be practiced without these specific details.

4 Referring initially to Fig. 2, a knife sharpener apparatus 50 in accordance
5 with an aspect of the present invention is illustrated. The apparatus 50
6 comprises a clamping mechanism 55 having a first clamp member 60 and a
7 second clamp member 65. The first and second clamp members 60 and 65
8 include first and second jaws 70 and 75, respectively, for securing a knife blade
9 (not shown) therebetween. The first and second clamp members 60 and 65 are
10 coupled together via a screw 80, or any other suitable fastener. The screw 80
11 extends through an aperture in the first clamp member 60 and is threadably
12 received in a tapped bore located in the second clamp member 65. A
13 thumbscrew 85, or any other suitable fastener, is threadably received in a tapped
14 bore located in the first clamp member 60. An end of the thumbscrew 85 bears
15 against a surface of the second clamp member 65 and is received in a dimple or
16 complementary depression to mitigate sidewise movement of the first and
17 second clamp members 60 and 65 relative to each other. A recess (not shown)
18 can be provided within an inner portion of one or both of the jaws 70 and 75 to
19 facilitate positioning of the knife blade within the jaws 70 and 75.

20 The knife sharpener apparatus 50 further includes at least one infinitely
21 adjustable guide rod assembly 90. Two guide rod assemblies 90 are shown in
22 Fig. 2, each extending from each of the clamp members 60 and 65. However,
23 the knife sharpener apparatus 50 can include only one guide rod assembly
24 extending from either clamp member or more than two guide rod assemblies
25 extending from one or both clamp members and is contemplated as falling within
26 the scope of the present invention. The adjustable guide rod assembly 90
27 comprises a guide rod 95 and a lock set. The lock set facilitates positioning the
28 guide rod 95 at a desired height. For example, the lock set illustrated in Fig. 2
29 comprises a connector 100 which is secured to the guide rod 95 via a setscrew
30 105 along a desired length of the guide rod 95. Accordingly, if the guide rod 95 is

1 removed from the apparatus 50, the connector 100 and setscrew 105 facilitates
2 the guide rod 95 being re-positioned to the same height. It is to be appreciated
3 that any means of positioning the guide rod 95 at a desired height can be
4 employed. Moreover, any number of stops can be utilized to provide a reference
5 to a given height. As another example, at least one sleeve (not shown) of a
6 predetermined length can be placed over the guide rod 95 to position the guide
7 rod 95 at a desired height.

8 The height of the guide rod 95 can determine an angle to which a knife
9 blade is sharpened. When utilizing a bench hone (not shown), the guide rod 95
10 rides along a surface upon which the bench hone is located. Thus the height of
11 the guide rod 95 controls the angle at which the knife blade contacts the bench
12 hone. Because the guide rod 95 of the present invention has an infinitely
13 adjustable height range, the knife sharpener apparatus 50 can be employed with
14 a plurality of bench hones having different heights. Furthermore, the knife
15 sharpener apparatus 50 can be employed with a single bench hone and achieve
16 an infinite number of different angles. In contrast, conventional knife sharpener
17 apparatuses are employed with bench hones of a single, predetermined height to
18 achieve a single, predetermined angle.

19 Additionally, the guide rod assembly 90 can include an infinitely adjustable
20 guide loop 110. The guide loop 110 is utilized to position and support a hand
21 held sharpening hone (not shown) during a sharpening operation. A guide rod
22 portion of the hand held sharpening hone rides along a bottom of the guide loop
23 110 to control an angle of the hand held sharpening hone. Thus, the location of
24 the guide loop 110 along the guide rod 95 determines the angle to which the
25 knife blade is sharpened. An adjustable guide block 115 can be utilized to
26 position and secure the guide loop 110. For example, the adjustable guide block
27 115 includes at least two apertures, one for receiving the guide rod 95 and
28 another for receiving an end portion of the guide loop 110. At least two tapped
29 bores are also included in the guide block 115 for receiving setscrews 117. The
30 setscrews 117 are utilized to secure the guide loop 110 in position with respect to

1 the guide rod 95. Accordingly, the guide loop 110 can be located along the guide
2 rod 95 at any desired height. In contrast, conventional knife sharpener
3 apparatuses include a predetermined number of openings for receiving a hand
4 held sharpening hone are disposed along extension arms at discrete intervals
5 determined by a manufacturer.

6 In accordance with another aspect of the present invention, at least one of
7 the first and second clamp members 60 and 65 comprises a plurality of threaded
8 bores 120. The threaded bores 120 facilitate positioning and securing of one or
9 more adjustable guide rod assemblies 90 at different locations along a length of
10 the first and/or the second clamp members 60 and 65. The threaded bores 120
11 can be provided in a side of the first and/or second clamp members 60 at
12 predetermined intervals. For example, repositioning the guide rod assembly(s)
13 90 from one threaded bore to an adjacent threaded bore can change the
14 sharpening angle of the apparatus 50 by two-degrees. Thus, when utilizing the
15 knife sharpener apparatus 50 in the field, the sharpening angle can be adjusted
16 by moving the guide rod assembly(s) 90 forward along the clamp member(s) 60,
17 65 without any other adjustments. Such an adjustment will change the
18 sharpening angle of the apparatus by substantially the same number of degrees
19 when employing either the bench hone or the hand held hone.

20 A swivel block 125 can be utilized to couple the guide rod assembly(s) 90
21 to the clamp member(s) 60, 65. The swivel block 125 comprises a first aperture
22 for receiving the guide rod assembly 90 and a corresponding threaded bore for
23 securing the guide rod assembly 90 thereto via a setscrew 127. The swivel block
24 125 also comprises a second aperture for receiving a fastener 130, such as a
25 screw, or the like, to couple the swivel block 125 and guide rod assembly 90 to
26 one of the threaded bores 120. A lip portion 135 on the swivel block 125
27 facilitates positioning the guide rod assembly 90 at a ninety-degree angle with
28 respect to the clamp member 60, 65 to which the guide rod assembly 90 is
29 secured. Moreover, lip portion 135 facilitates a forward rotation of the guide rod
30 assembly 90 when the fastener 130 is loosened. The guide rod assembly 90 can

1 be rotated such that it is folded in towards the clamp members 60, 65, as
2 depicted in Fig. 3. Accordingly, the knife sharpener apparatus 50 is more
3 compact than conventional designs.

4 It is to be appreciated that a stationary block (not shown) can be employed
5 in place of the swivel block 125. The stationary block can include a lip portion
6 that extends the full length of the block to mitigate rotation of the guide rod
7 assembly with respect to the clamp member. As another alternative, a fully
8 rotatable block having no lip portion (not shown) can be employed to facilitate full
9 rotation of the guide rod assembly with respect to the clamp member. Moreover,
10 the block employed (swivel, stationary, or fully rotatable) can include a slot in
11 place of the second aperture to provide for positioning of a guide rod assembly at
12 locations between the threaded bores 120 provided on the clamp member 60,
13 65. Thus, the slot provides for an infinitely adjustable guide rod assembly along
14 the length of the clamp member 60, 65.

15 Turning now to Fig. 4, a knife sharpener apparatus 140 according to
16 another aspect of the present invention is depicted. The knife sharpener
17 apparatus 140 comprises a clamping mechanism 145. The clamping mechanism
18 145 includes first and second clamp members 150 and 155 having first and
19 second jaws 160 and 165, respectively, for securing a knife blade (not shown)
20 therebetween. The jaws 160 and 165 are coupled together via a fastener 170,
21 such as a screw, or the like. A thumbscrew 175, or the like, is provided to
22 mitigate sidewise movement of the first and second clamp members 150 and 155
23 relative to each other, in a manner similar to that described with respect to Fig. 2.

24 The knife sharpener apparatus 140 also includes an adjustable guide rod
25 assembly 180. The adjustable guide rod assembly 180 comprises a guide rod
26 185 and a lock set 190. The lock set 190 facilitates setting the guide rod 185 at a
27 desired height. For example, a connector can be secured via a setscrew along a
28 desired length of the guide rod 185. The guide rod 185 is then inserted into one
29 of a first set of apertures 195 located on a top portion of a clamp member 150,
30 155. The lock set 190 acts as a stop such that the guide rod 185 is positioned at

1 the desired height. A plurality of tapped bores 200 are provided within a side
2 portion of the clamp member 150, 155. The plurality of tapped bores 200
3 correspond with the first set of apertures 195. Accordingly, a setscrew provided
4 within one of the tapped bores 200 operates to secure the guide rod assembly
5 180 within the corresponding aperture 195. Having the first set of apertures 195
6 and corresponding tapped bores 200 located on the clamp member 150, 155
7 facilitates adjustability with respect to the position of the guide rod assembly 180
8 along a length of the clamp member 150, 155. A second set of second apertures
9 203 can also be provided within the clamp member 150, 155 to allow for an end
10 portion of a guide rod 185 to pass through. Alternatively, a threaded guide rod
11 (not shown) in combination with a stop mechanism and at least one tapped bore
12 in the clamp member can be employed in place of the structure described above.

13 The adjustable guide rod assembly 180 further includes an infinitely
14 adjustable guide loop 205 and guide block 210. The infinitely adjustable guide
15 loop 205 provides for positioning and supporting a hand held sharpening hone at
16 any desired angle rather than at predetermined, discrete angles provided by
17 conventional apparatuses. The guide rod 185 also includes a rounded end
18 portion 215 to facilitate movement of the knife sharpener apparatus 140 along a
19 surface when utilizing the apparatus 140 with a bench hone.

20 Fig. 5 illustrates yet another knife sharpener apparatus 220 in accordance
21 with an aspect of the present invention. The knife sharpener apparatus 220
22 comprises a clamping mechanism 225, which includes first and second clamp
23 members 230 and 235. The clamp members 230 and 235 include first and
24 second jaws 240 and 245, respectively, for securing a knife blade (not shown)
25 therebetween. The jaws 240 and 245 are coupled via a fastener 250, such as a
26 screw, or the like. A thumbscrew 255, or the like, is provided to mitigate sidewise
27 movement of the first and second clamp members 230 and 235 relative to each
28 other, in a manner similar to that described with respect to Fig. 2.

29 The knife sharpener apparatus 220 also includes an adjustable guide rod
30 assembly 260. The adjustable guide rod assembly 260 comprises a guide rod

1 265 and a lock set 270. The lock set 270 facilitates positioning and re-positioning
2 the guide rod 265 at a desired height. Moreover, the lock set 270 is configured
3 such that the height of the guide rod 265 is infinitely adjustable. A plurality of first
4 apertures 275 and corresponding tapped bores 280 are provided within the
5 clamp member 230, 235 to secure the guide rod assembly(s) 260 to the clamp
6 member(s) 230, 235. A plurality of second apertures 283 can also be provided
7 within the clamp member 230, 235 to allow for an end portion of a guide rod
8 assembly(s) to pass through.

9 The guide rod 265 of the adjustable guide rod assembly 260 comprises an
10 integral guide loop 285 to position and support a hand held sharpening hone (not
11 shown) during a sharpening operation. The guide rod 265 also includes a
12 rounded end portion 290 to facilitate movement of the knife sharpener apparatus
13 220 along a surface when utilizing the apparatus 220 with a bench hone. It is to
14 be appreciated that any guide rod configuration of an integral guide loop can be
15 employed, such as the triangular-shaped configuration 295 depicted in Fig. 6.
16 The guide rods having integral guide loops can be configured such that with one
17 setting, the knife sharpener apparatus can be employed with a bench hone and a
18 hand held hone wherein there is a two-degree difference between utilizing the
19 bench hone and the hand held hone. However, it is to be appreciated that the
20 guide rods can be configured to any desired setting.

21 Moreover, turning now to Fig. 7, two guide rods can be employed in
22 accordance with another aspect of the present invention. A first guide rod 300
23 can be utilized to provide for an infinitely adjustable guide loop and a second
24 guide rod 310 can be utilized to provide for an infinitely adjustable guide rod
25 height. The first and second guide rods 300 and 310 can be secured in position
26 with a positioning mechanism, such as block 320.

27 Turning back to Fig. 5, it is to be appreciated that a swivel block 293 can
28 be employed in place of the plurality of apertures 275 and corresponding tapped
29 bores 280 to secure the guide rod assembly(s) 260 to the clamp member(s) 230,
30 235.

1 Fig. 8 illustrates yet another example of a knife sharpener apparatus 325
2 in accordance with an aspect of the present invention. The knife sharpener
3 apparatus 325 includes a clamping mechanism having first and second clamp
4 members 330, 335 and first and second jaws 340, 345. Similar to other clamping
5 mechanisms described herein, a fastener 350 and thumbscrew 355 are provided
6 to couple the first and second clamp members 330, 335. A guide rod 360 is
7 inserted through an aperture in one of the clamp members 330, 335 and coupled
8 to the clamp member 330, 335 via a setscrew 365. The guide rod 360 includes a
9 rounded end portion 370 and a guide loop 375 integrally formed therein. The
10 guide rod 360 is infinitely adjustable via a lock set 380. Accordingly, only one
11 setting is needed to set the knife sharpener apparatus 325 to a desired angle.
12 Moreover, the knife sharpener apparatus 325 can be employed with both bench
13 hones and hand held hones without changing the setting. Although, it is to be
14 appreciated that the setting can easily be changed via adjustment of the lock set
15 380. The guide rod 360 can be removed from the apparatus 325 for travel or
16 storage by loosening the setscrew 365 and easily re-positioned to the same
17 angle when ready for use due to the placement of the lock set 380.

18 It is to be appreciated that any of the assemblies described herein can
19 employ a threaded guide rod 383, as depicted in Fig. 9, in place of the smooth
20 guide rods illustrated in Figs. 2-8.

21 Yet another example of a knife sharpener apparatus 385 in accordance
22 with an aspect of the present invention is shown in Fig. 10. Only one clamp
23 member 390 and jaw 395 of a clamping mechanism is depicted for the sake of
24 brevity. Similar to other clamping mechanisms described herein, a fastener 400
25 and thumbscrew 405 are provided to couple the first and second clamp
26 members. An adjustable guide plate 410, having a plurality of openings 415
27 therein, can be coupled to the clamp member 390. The guide plate 410 has a
28 fixed height and a discrete number of openings 415; however, the guide plate
29 410 is horizontally adjustable along a length of the clamp member 390 via a
30 plurality of apertures 420 to change an angle of the openings 415. Moreover, the

1 guide plate 410 can be made infinitely adjustable along the length of the clamp
2 member 390 with the addition of an adjusting block (not shown). The adjusting
3 block includes an aperture to couple the block to one of the apertures 420 in the
4 clamp member 390 via a fastener. The adjusting block also includes a slot
5 formed therein such that aperture 425 in the guide plate 390 aligns with the slot
6 to slidably position the guide plate 390 at locations between the apertures 420
7 via a fastener.

8 It is to be appreciated that the angles provided by the guide plate 410 can
9 also be adjusted by placing a spacer (not shown) between the guide plate 410
10 and the clamp member 390.

11 Additionally, as illustrated in Fig. 11, a guide rod 425 and a guide plate
12 block 430 can be employed with a guide plate assembly 435 to provide an
13 infinitely adjustable sharpening angle when utilized with a bench hone. The
14 guide rod 425 is inserted in an aperture located in the guide plate block 430 and
15 secured in place with a setscrew. At least one other aperture is located in the
16 guide plate block 430 to couple the guide plate block 430 with the guide plate
17 assembly 435. Therefore, vertically repositioning the guide rod 425 within the
18 guide plate block 430 and/or vertically repositioning the guide plate block 430 on
19 the guide plate assembly 435 can infinitely adjust the guide rod 425, and thus, an
20 angle of the knife sharpener apparatus.

21 The guide plate assembly 435 comprises an adjustable guide plate 440
22 and a guide plate foot 445. The adjustable guide plate 440 includes a plurality of
23 openings 450 for receiving a hand held sharpening hone. The locations of the
24 openings 450 determine a sharpening angle of the knife sharpener apparatus.
25 Accordingly, to sharpen a knife blade at an angle not provided by the openings
26 450, the guide plate 440 can be vertically adjusted via a plurality of apertures 455
27 (Fig. 12) located in the guide plate 440. The guide plate apertures 455
28 correspond with one or more apertures 465 located in the guide plate foot 445 to
29 vertically reposition the guide plate 440 depending on the desired angle. The
30 guide plate foot 445 also includes an aperture 460 to secure the guide plate

1 assembly 435 to a clamping mechanism.

2 Fig. 13 illustrates a guide plate assembly 470 for a knife sharpener
3 apparatus in accordance with another aspect of the present invention. The guide
4 plate assembly 470 includes a guide rod 475 and guide plate block 480 to
5 provide an infinitely adjustable sharpening angle when utilized with a bench
6 hone. The guide rod 475 and guide plate block 480 are assembled and
7 employed in a manner similar to the guide rod 425 and guide plate block 430 of
8 Fig. 11. Thus, further discussion of such components will be omitted for the sake
9 of brevity. An adjustable guide plate 485 having a plurality of discrete openings
10 490 as well as one or more slots 495 located therein is also provided. The slots
11 495 facilitate vertical positioning of the guide plate 485 such that any desired
12 angle can be attained when employed with a hand held sharpening hone. Slots
13 495 are utilized in a manner similar to apertures 455 discussed with respect to
14 Figs. 11 and 12.

15 The guide plate assembly 470 further includes a guide plate foot 500,
16 which is utilized to couple the guide plate assembly 470 to a clamping
17 mechanism. The guide plate foot 500 includes a flange portion 505 having an
18 aperture therein for coupling the guide plate assembly 470 to an aperture
19 provided in a side portion of a clamp member via a fastener. It is to be
20 appreciated that the guide plate foot 500 can include a slot in place of the
21 aperture to provide for forward and backward adjustment of the guide plate
22 assembly 470. Such an adjustment operates to change the sharpening angle of
23 the apparatus. When the fastener is loosened, the flange portion 505 allows the
24 guide plate assembly 470 to rotate such that it folds in towards the clamp
25 members 60, 65, as depicted in Fig. 14. Thus, guide plate assembly 470 is
26 infinitely adjustable as well as foldable.

27 Fig. 15 depicts yet another guide plate 510 that can be employed with a
28 knife sharpener apparatus in accordance with an aspect of the present invention.
29 The guide plate 510 includes a plurality of openings 515 adapted to receive a
30 hand held sharpening hone and a foldable foot portion 520 to facilitate foldability

1 of the knife sharpener apparatus.

2 It is to be appreciated that the individual components of the knife
3 sharpener apparatus described herein can be assembled or configured in any
4 conceivable combination and is contemplated as falling within the scope of the
5 present invention. Further, the components described herein can be of any
6 suitable shape, size, and material and can be employed with hand held
7 sharpening hones, bench hones, or both.

8 It is to be further appreciated that the apertures provided in the figures are
9 for illustrative purposes only and any number of apertures can be provided in the
10 individual components. Moreover, any of the apertures illustrated can be
11 replaced with slots to provide for increased adjustability of the knife sharpener
12 apparatus.

13 In view of the foregoing structural and functional features described
14 above, a methodology in accordance with various aspects of the present
15 invention will be better appreciated with reference to Fig. 16. While, for purposes
16 of simplicity of explanation, the methodology of Figs. 16 is shown and described
17 as executing serially, it is to be understood and appreciated that the present
18 invention is not limited by the illustrated order, as some aspects could, in
19 accordance with the present invention, occur in different orders and/or
20 concurrently with other aspects from that shown and described herein.
21 Moreover, not all illustrated features may be required to implement a
22 methodology in accordance with an aspect the present invention.

23 Fig. 16 illustrates a methodology for adjusting a knife sharpener apparatus
24 to a desired angle in accordance with an aspect of the present invention. At 525,
25 a space setting block, as known in the art, is placed on a bench hone. A
26 clamping mechanism is disassembled at 530 by removing any fasteners
27 employed to couple the clamp mechanism together. One half of the clamping
28 mechanism is placed on the space setting block at 535 such that a guide rod is
29 hanging from the clamp in a vertically downward position. At 540, the guide rod
30 is positioned so that the guide rod is at a substantially ninety-degree angle with

1 respect to the clamp and a first end portion of the guide rod is contacting a
2 surface upon which the bench hone is located. At 545, a lock set is placed on
3 the guide rod at a point where the guide rod contacts the clamp mechanism such
4 that the guide rod can be removed and repositioned on the clamp mechanism at
5 a same height. At 550, the half of the clamping mechanism is positioned such
6 that a second end portion of the guide rod contacts the surface upon which the
7 bench hone is located. A guide block is then adjusted at 555 so that a guide loop
8 is level with a top portion of the bench hone. At 560, the other half of the
9 clamping mechanism is adjusted in a similar manner. Finally, at 565, the two
10 halves are coupled together via one or more fasteners. The knife sharpener
11 apparatus is now set to an angle designated by the space setting block.

12 What has been described above includes exemplary implementations of
13 the present invention. It is, of course, not possible to describe every conceivable
14 combination of components or methodologies for purposes of describing the
15 present invention, but one of ordinary skill in the art will recognize that many
16 further combinations and permutations of the present invention are possible.
17 Accordingly, the present invention is intended to embrace all such alterations,
18 modifications and variations that fall within the spirit and scope of the appended
19 claims.